AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A display unit comprising:

a plurality of electron emission devices arranged in a matrix format;

a plurality of scan lines arranged in a row direction and connected to the plurality of electron emission devices;

a plurality of data lines arranged in a column direction and connected to the plurality of electron emission devices;

a scan driver for supplying a selection signal for selecting a line of electron emission devices to the scan lines sequentially in the column direction;

a data driver for supplying drive signals based on video data for driving the electron emission devices to each of the plurality of data lines; and

a signal correction circuit for correcting each of the drive signals to be supplied to the plurality of data lines, wherein the signal correction circuit corrects the drive signals using a cumulative value of the video data corresponding to said drive signals, the signal correction circuit comprising:

a first memory to sequentially store the video data corresponding to each of the data lines in a first direction,

a second memory to store first correction data which is obtained by, for each data line, multiplying each of the video data read out from the first memory by a predetermined coefficient and then sequentially accumulating the multiplied data in a second direction opposite to the first direction, and

a third memory to store second correction data as the cumulative value for each of the data lines, the second correction data being obtained by, for each data line,

sequentially accumulating the first correction data read out from the second memory in the first direction.

2. (Original) The display unit according to claim 1 wherein the signal correction circuit provides corrections which vary with the position of the plurality of electron emission devices in the row direction.

3. (Original) The display unit according to claim 1 wherein an electrical current flows to each electron emission device in accordance with the potential difference between a selection signal and drive signal supplied to a plurality of electron emission devices in the selected line, and the correction values are determined so as to compensate for a voltage decrease in the row direction of each of the plurality of electron emission devices that is determined by the value of the current and the wiring resistance of the scan lines at various positions of a plurality of electron emission devices arranged in the row direction.

4. (Currently amended) A display unit comprising:

a display panel including scan lines, data lines, and a plurality of electron emission devices arranged in a matrix format, the display panel responsive to a scan line selection signal to select a scan line thereby selecting a line of electron emission devices, and further responsive to a plurality of drive signals to drive each electron emission device of the line of electron emission devices, the drive signals being based on corresponding video data; and

a signal correction circuit, comprising:

a first memory to sequentially store the video data corresponding to each of the data lines in a first direction,

a second memory to store first correction data which is obtained by, for each data line, multiplying each of the video data read out from the first memory by a predetermined coefficient and then sequentially accumulating the multiplied data in a second direction opposite to the first direction, and

a third memory to store second correction data as a cumulative value for each of the data lines, the second correction data being obtained by, for each data line, sequentially accumulating the first correction data read out from the second memory in the first direction,

wherein a current according to a potential difference between the selection signal and the drive signals flows to corresponding electron emission devices of the line of electron emission devices along the selected scan line so that the electron emission devices emit electrons in accordance with the electric currents; and

wherein the signal correction circuit corrects each of the drive signals to be supplied to the corresponding electron emission devices in order to compensate for a voltage decrease that arises when the current flows along the selected scan line, the drive signals being corrected based on the cumulative values of the video data.

5. (Currently amended) A display unit comprising:

a plurality of scan lines extending in a row direction;

a plurality of data lines extending in a column direction;

an electron emission device positioned at intersections of the plurality of scan lines and the plurality of data lines;

a scan driver for supplying a selection signal to sequentially select lines of electron emission devices;

a data driver for supplying drive signals based on video data to drive electron emission devices of a selected line of electron emission devices; and

a signal correction circuit for individually correcting the drive signals to be supplied respectively to the plurality of electron emission devices, the signal correction circuit comprising:

a first memory to sequentially store the video data corresponding to each of the data lines in a first direction,

a second memory to store first correction data which is obtained by, for each data line, multiplying each of the video data read out from the first memory by a predetermined coefficient and then sequentially accumulating the multiplied data in a second direction opposite to the first direction, and

a third memory to store second correction data as a cumulative value for each of the data lines, the second correction data being obtained by, for each data line, sequentially accumulating the first correction data read out from the second memory in the first direction,

wherein the signal correction circuit corrects each drive signal by adding a correction value to its corresponding video data, levels of the correction values used to drive the electron emission devices being based on the position of the electron emission device within the selected line of electron emission devices, the correction values being based on the cumulative values of the video data.

6. (Original) The display unit according to claim 5 wherein the scan driver is connected to one end of the scan lines so that the correction values increase with an increase in the distance between electron emission devices connected to the scan lines and the scan driver while the video signal remains constant.

7. (Original) The display unit according to claim 5 wherein the correction values are determined in accordance with the magnitude of voltage decrease at each position of a plurality of electron emission devices connected to the scan lines.

8. (Currently amended) A display unit, comprising:

a display panel in which m × n electron emission devices are arranged in a matrix format and positioned at the intersections of m scan lines and n data lines, and phosphors are positioned opposite the electron emission devices;

a data driver for supplying drive signals to the n data lines, each drive signal based on corresponding video data;

a scan driver for sequentially supplying a selection signal to at least one of the m scan lines for selecting a line of electron emission devices; and

a signal correction circuit for compensating for a voltage increase caused by a current, Ii (i = 1 to n), which flows from said data lines to a selected scan line, wherein the signal correction control circuit corrects the drive signals based on cumulative values of the video data, the signal correction circuit comprising:

a first memory to sequentially store the video data corresponding to each of the data lines in a first direction,

a second memory to store first correction data which is obtained by, for each data line, multiplying each of the video data read out from the first memory by a predetermined coefficient and then sequentially accumulating the multiplied data in a second direction opposite to the first direction, and

a third memory to store second correction data as the cumulative value for each of the data lines, the second correction data being obtained by, for each data line, sequentially accumulating the first correction data read out from the second memory in the first direction.

9. (Currently amended) The display unit according to claim 8 wherein the signal correction circuit corrects the video data to be supplied to the data driver, and uses the value Di + Ci as the video signal when the video signal correction amount Ci is determined from Equation 1 below where columns are sequentially designated 1, 2, 3, and so on to n beginning with the one closest to the scan driver, the video signal amplitude of the i-th column is Di, and a predetermined coefficient is k:

$$C_i = C_{i-1} + \sum_{j=i[1]}^{n} k \cdot D_j \quad \text{Equation 1}$$

where i, j $\geq$ 1, C_0 [[c0]] = 0, k = coefficient, and n = data line count.

10. (Canceled)

11. (Previously presented) The display unit according to claim 8 wherein the signal correction circuit corrects the video data to be supplied to the data driver, the data driver has been positioned at the other side of an initial data line to supply the drive signal, and the signal correction circuit provides cumulative additive correction by multiplying the video signal amplitude Di of the i-th column by a predetermined coefficient.

12. (Currently amended) A display unit, comprising:

a display panel having a plurality of scan lines extending in a row direction, a plurality of data lines extending in a column direction, and a plurality of electron emission devices disposed at intersections of the plurality of scan lines and the plurality of data lines;

a scan driver for sequentially supplying a selection signal to the plurality of scan lines in the column direction to sequentially select lines of electron emission devices;

a data driver for supplying drive signals for driving corresponding electron emission devices of a selected line of electron emission devices via the plurality of data lines;

a video signal processor for processing the video signal and outputting the processed video signal as video data;

an interface section for transmitting and receiving the video data from the video signal processor; and

a signal correction circuit configured to produce corrected video data by adding correction values to the video data received from the interface section and supply the corrected video data to the data driver, the signal correction circuit comprising:

a first memory to sequentially store the video data corresponding to each of the data lines in a first direction,

a second memory to store first correction data which is obtained by, for each data line, multiplying each of the video data read out from the first memory by a predetermined coefficient and then sequentially accumulating the multiplied data in a second direction opposite to the first direction, and

a third memory to store second correction data as a cumulative value for each of the data lines, the second correction data being obtained by, for each data line, sequentially accumulating the first correction data read out from the second memory in the first direction,

wherein the data driver generates the drive signals based on the corrected video data,

wherein levels of the correction values for the electron emitting devices in a selected line of electron emitting devices are based on positions of the electron emission devices in the selected line, the correction values being based on the cumulative values of the video data corresponding to the selected line of electron emitting devices.

13. (Original) The display unit according to claim 12 wherein the display panel, the scan driver, and the data driver constitute a display module; wherein a receiver of the interface section is positioned toward the display module; and wherein a transmitter of the interface section transmits a video signal from the video processor circuit to the receiver in digital form.

14. (Canceled)